Appln. No. 10/069,926

Amdt. Dated October 28, 2003

Reply to Office action of July 28, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the

application:

Listing of Claims:

Claims 1-12. (Canceled)

13. (Currently amended) The method of claim 12 A method for producing bores in

workpieces of electrically conductive material, in particular injection ports (11) in

injection nozzles (10) of fuel injection systems for motor vehicles, the method

comprising, removing material in the workpiece forming the counterelectrode in a

targeted way by spark erosion by means of an erosion wire (12) forming an electrode,

actively exciting the erosion wire (12) to a defined vibration,

and establishing the form of vibration by targeted variation of the vibration

excitation in accordance with the desired bore hole shape,

wherein the vibration excitation of the erosion wire (12) is performed on one end

(122) of the wire and the vibration excitation of the erosion wire (12) is performed

separately in two orthogonal axes (x, y) located in the same plane, and that to attain the

desired form of vibration of the erosion wire (12), the frequencies and the ratio of

frequency to amplitude of the two vibration excitations as well as the phase

displacement between the two vibration excitations in both orthogonal axes are

controlled.

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14. (Previously added) The method of claim 13 wherein, to attain a bore hole of circular

cross section, the vibration excitations in the two orthogonal axes (x, y) are performed

with the same amplitude and with a phase displacement ($\Delta \phi$) of 90°.

15. (Previously added) The method of claim 13 wherein, to create a bore hole of

elliptical cross-sectional area, the vibration excitations in the two orthogonal axes (x, y)

are performed with different amplitudes and with a phase displacement ($\Delta \phi$) of 90°.

16. (Currently amended) An apparatus for producing bores in workpieces of electrically

conductive material performing the method of claim 13 comprising an erosion wire (12)

forming an electrode, wherein the an end (122) of the erosion wire (12) being is

received in a fastening unit (13), wherein the fastening unit (13) is guided displaceably

along two orthogonal axes (x, y) oriented transversely to the longitudinal axis of the

erosion wire (12), and wherein two actuators (14, 15) engage the fastening unit (13) for

separate oscillating displacement of the fastening unit (13) along the two orthogonal

axes (x, y).

Claims 17-18. (Canceled)

19. (Previously added) The apparatus of claim 16 wherein the actuators (14, 15)

include piezoelectric elements (23), which upon application of an alternating voltage

undergo a defined change in length in one direction and the other.

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Claims 20-21. (Canceled)

22. (Previously added) The apparatus of claim 19 wherein the actuators (14, 15) are

each formed by a piezoelectric stack (17, 18), in which a plurality of piezoelectric

elements (23) are disposed in contact with one another in the direction of their change

in length.

Claims 23-24. (Canceled)

25. (Previously added) The apparatus of claim 16 wherein the actuators (14, 15) are

embodied as electromechanical vibration motors.

Claims 26-27. (Canceled)

28. (Previously added) The apparatus of claim 16 wherein the actuators (14, 15) are

embodied as ultrasonic transmitters.

Claims 29-30. (Canceled)

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